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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GOPAL PINGALI,
CLAUDIO PINHANEZ,
MARK E. PODLASECK,
ANTHONY LEVAS AND
FREDERIK C.M. KJELDSSEN

Appeal 2008-1616
Application 10/735,053
Technology Center 2800

Decided: June 23, 2008

Before EDWARD C. KIMLIN, CHARLES F. WARREN, and
PETER F. KRATZ, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-13 and 15-40.
Claim 1 is illustrative:

1. A positioning system comprising:

at least one mount for mounting a projection unit, the projection unit comprised of at least a projector for projecting a distorted image; wherein the at least one mount is coupled to a mechanism for providing translational movement and rotational movement for adjusting one of a position and an orientation of the projection unit to produce from the distorted image a substantially undistorted image on a surface.

The Examiner relies upon the following references as evidence of obviousness:

Miyamoto	5,114,224	May 19, 1992
Machtig	5,278,596	Jan. 11, 1994
Pinhanez	6,431,711 B1	Aug. 13, 2002
Connelly	2003/0202156 A1	Oct. 30, 2003
Raskar	6,793,350 B1	Sep. 21, 2004

Appellants' claimed invention is directed to a positioning system for a projection unit comprising a mount that provides translational and rotational movement of the projection unit. The projection unit comprises a projector for projecting a distorted image that becomes a substantially undistorted image on a surface as a result of an adjustment of the mechanism that provides translational and rotational movement to the projector.

The appealed claims stand rejected under 35 U.S.C. § 103a as follows:

(a) claims 1-3, 5, 6, 15-32, and 34-40 over Miyamoto in view of Raskar and Connelly,

(b) claim 4 over the combination of references stated in (a) above further in view of Machtig,

(c) claims 7-13 and 33 over the combination of the references stated in (a) further in view of Pinhanez.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejections for the reasons set forth in the Answer, which we incorporate herein, and we add the following for emphasis only.

There is no dispute that Miyamoto discloses a positioning system for a projection unit comprising a mechanism which provides rotational movement for adjusting one of a position and an orientation of the projection unit. As recognized by the Examiner, the mechanism of Miyamoto for adjusting the position and orientation of the projection unit does not provide the presently claimed translational movement for the projection unit. However, we agree with the Examiner that Connelly evidences the obviousness of employing a mechanism that provides translational movement to a projection unit for properly focusing the image projected by the unit. As a result, we fully concur with the Examiner that it would have been obvious for one with ordinary skill in the art to provide translational movement of the type disclosed by Connelly for the projection unit of Miyamoto for the purpose of enhancing the proper positioning and focusing of Miyamoto's projected image. Raskar is cited simply for the proposition that it was known in the art that an image projected on a curved object as in Miyamoto would be distorted in the absence of a necessary correction.

A principal argument advanced by Appellants is that Miyamoto does not teach projecting a distorted image. However, Appellants have not refuted the Examiner's factual finding that the image projected by

Miyamoto's projector necessarily or inherently is distorted on the target surface and, therefore, the projector requires a mechanism for adjusting the position and orientation of the projector to produce a substantially undistorted image on the surface of the curved target. As acknowledged by Appellants, Connelly provides translational movement for the projection unit to the so-called "sweet spot" to alleviate distortion of the projected image.

Appellants contend that the distorted image in the Miyamoto system results from an interaction of the image with the display surface whereas claim 1 on appeal "does not concern production of distorted image on a surface" (Reply Br, sentence bridging page 3-4). Appellants submit that "claim 1 concerns correcting the appearance of a projected distorted image on a surface 'to produce a substantially undistorted image' 'by adjusting one of a position and an orientation of the projection unit'" (Reply Br. 4, first para.). Appellants further state that to read these claim limitations "to encompass distortion that results from the interaction of a projected image with a surface" requires "an unreasonable construction for claim 1, and essentially turned the issues on their head" (*id.*). Appellants point to the Specification disclosure that it is preferred that the projection unit 5 be equipped to produce the distorted image 16 (*see* page 2 of Reply Br.). Appellants submit that the claim 1 language "a projector for projecting a distorted image" must be interpreted as a projector wherein "an undistorted image is distorted prior to projection and then projected" (Supp. Reply Br. 2, first para.).

It is a fundamental principal that claim language must be given its broadest reasonable interpretation during prosecution. Accordingly, we are not persuaded by Appellants' argument that the claim 1 language "a

projector for projecting a distorted image" does not encompass the projection of an undistorted image that becomes distorted through interaction with a target surface. In our view, one of ordinary skill in the art would reasonably interpret the claim language at issue as embracing a projector which transmits or projects an image that is distorted on the target viewing surface. Claim 1 does not require that the projector itself distorts an image or that a device feeds a distorted image to the projector. Indeed, the appealed claims fail to recite any structure for the projector that is in any way different than the structure of the Miyamoto projector. Nor do the appealed claims recite any functional language which defines a particular function that the projector of Miyamoto is not capable of performing. Since there is apparently no dispute that the image projected by Miyamoto's projector is distorted on the curved surface of the target and, therefore, requires positional adjustment of the projector, we find no error in the Examiner's position that Miyamoto discloses the claimed "projector for projecting a distorted image."

The remaining arguments advanced by Appellants with respect to separate claims have been adequately addressed in the Examiner's Answer. We further note, however, that claims 32, 34, and 40 do not require a projector for projecting a distorted image. Also, the Examiner has correctly pointed out that Appellants have not addressed and contested the Examiner's separate rejection of claim 4 over the combined teachings of Miyamoto, Raskar, Connelly, and Machtig (see Ans. 3, second para.). In addition, Appellants do not discuss the Pinhanez reference applied by the Examiner. As stated at page 1 of Appellants' Specification, Pinanez' system distorts the image before projection as well.

We further note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(effective Sept. 13, 2004).

AFFIRMED

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